

golfer will be prompted to enter data relating to a variety of extrinsic factors having an effect on a golf game, such as weather conditions, temperature, wind, golf ball compression data, and the like. /-/

Player performance is impacted by both the player's skill and the extrinsic factors that may interfere with or enhance a player's shots during the course of a game. Player performance includes such tracked statistics as average distance per golf club, number of putts per hole, overall score and the like. Extrinsic factors include environmental dimensions, for example temperature, ground conditions, date and time, golf ball compression and golf ball model number, to name a few. While player's skill most directly impacts game performance, extrinsic factors have an effect on player performance to the extent that they interfere with or compliment player's skill; for example, experienced players understand that shot distance with a given club will commonly vary given different extrinsic factors such as weather and temperature, ground conditions, golf ball compression and model number, or even the time of day.

Player performance and extrinsic factor data is stored in the apparatus of the present invention in such a manner as to preserve relationships between player performance data and extrinsic factor data to provide a subsequent report to the player.

Accordingly, and a further aspect of the invention and

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apparatus and method are provided for recording and reporting player performance, selected extrinsic factors tending to affect player performance, and the relationship of extrinsic factors on player performance. In a further embodiment of the invention an apparatus and method are provided to assist a player in selecting clubs during game play in view of the relationship between extrinsic factors and player performance. Prior to game play, for example, information is provided to allow a player to make informed performance-affecting decisions such as the best time of day to play, the best golf ball, compression to use, or the most ideal ground conditions, for example. During game play, the invention provides a means to record player performance and to assist a player in selecting the most appropriate golf club for each shot considering the players club skill and the effect of extrinsic factors on performance with each club. After game play, invention provides a player with a comprehensive set of historical detail and summary information on performance, including the effect of extrinsic factors on performance. --;

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n.e. <sup>not in line</sup> Page 14, line 11, after "screen.", insert the following paragraph:

--Alternately, it will be apparent to those skilled in the art that data entry in any given screen may be conducted automatically, rather than manually. For example, automated input means such as an internal clock could be employed to provide time of day information, while an internal thermometer

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and/or barometer could automatically input temperature, altitude, and barometric pressure. Similarly, wind speed data might be automatically entered using a wind speed sensor. Such input means could further be linked to a microprocessor including an algorithm for extrapolating weather condition reporting screens from temperature, wind speed, and barometric pressure data.--;

23 Page 15, line 21, after "played.", insert --Pre-game screen parameters can include player identification data, data pertaining to the game to be played (e.g., number of holes, etc.), and preferably data pertaining to extrinsic factors affecting performance, such as time of day, temperature, weather conditions, ground conditions, ball compression and model data, and the like.--;

24 Page 19, line 20 before "temperature", insert --an extrinsic factors such as--;

line 21 before "date", insert --ground conditions--.

Page 21, line 27, after the phrase "Figure 5.", insert --

25 The golf-set data entered in this screen can be employed as a basis for game-interactive golf club selection advice, as well as post-game performance reports. Such reports can provide a player with an indication of where his game is better or worse with respect to a particular club. For example, player performance information relating to accuracy and distance achieved with a particular club can be compiled for

statistics/reports useful for game-interactive club selection advice (Figs. 18-20). Since differences between given sets of golf clubs may be considered an extrinsic factor tending to affect a players' performance, statistics reporting screens can be provided comparing a player's average yardage results with different sets of golf clubs (Fig. 32).--;

Page 22, line 11, after the word "mode.", insert --As

with the club set data entered in the golf set data screen 40, the extrinsic factors of golf ball model/compression data entered in screen 42 provide the basis for post-game and/or game-interactive advice and statistical screens tending to aid a player in both club selection and general improvement of his golf game. As the model/compression of a particular golf ball can be considered an extrinsic factor affecting performance, statistical reports of yardage in relation to the clubs used and the compression/model data (Figs. 24, 25) can have positive results on future performance. Likewise, golf club selection advice based on ball compression/model data is also provided according to the method described below.--;

line 15, before "data" insert --performance and extrinsic factor--

line 16, after "mode", insert --For example, the

illustrated embodiment contemplates entry of a number of parameters, including course data defining the scope of the game to be played (e.g., the number of holes and the type and number of clubs to be used). In addition, selected extrinsic

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factors are recorded and reported in relation to performance to help improve player performance through club selected and game-interactive and post-game reports. As discussed, examples of such extrinsic data include temperature, time of day, barometric pressure, weather, ground and fairway conditions, golf ball model and compression data, and the club set being used.

Page 27, line 20, after "shot.", insert the following paragraph:

--The "suggest club" choice screen in the detail track mode provides appropriate club selection advice based on the data entered into the game set-up, pre-game, and game-interactive screens. For example, club set, temperature, wind, ball compression/model data, player shot performance with various clubs, and other intrinsic and extrinsic factor data entered both before and during game play will be evaluated by the microprocessor to determine the best club for a player to use. Of course, the complexity of the algorithm will vary with each game-interactive mode, according to the amount of data prompted and entered in the various pre-game and game-interactive screens.

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Page 29, line 25, after "varying" insert ~~-f~~extrinsic factors such as ground or--;

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Page 30, line 13, after "data" insert ~~-f~~, both performance and extrinsic factors, ~~-f1~~

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Page 31, line 1, after "reports", insert ~~-f~~Among the

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available statistical reports are several pertaining to the effects of both player performance and extrinsic factors on the player's game. For example, the "Physical Endurance" report identifies the outcome of a player's intrinsic limitations on performance. Similarly, the "temperature" report provides information on the effects of an extrinsic variable, weather, on game play. --; and

line 27, after "25-41.", insert --As depicted, a

number of reports are shown in the illustrated embodiment, including reports relating extrinsic factors to player performance. a partial listing of potential screens and reports that display general performance statistics include: club summary screen (Figure 18), approach/chipping statistics (Figure 20), practice range statistics (Figure 21), overall score report (Figure 30), course score report (Figure 31), clubset detail specify screen (Figure 33) and clubset detail report (Figure 33a), physical endurance report (Figure 28), where game better report (Figure 34), where game worse report (Figure 35), best part of game (Figure 36), worst part of game report (Figure 37), game duration report (Figure 38), holes played report (Figure 39), and hazards report (Figure 40). One skilled in the art could envision numerous additional performance related reports.

The approach/chipping statistics (Figure 20) is available for review during game play and provides a means for player to select the most appropriate club for approach or chip shots.

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Other game performance reports included in the previous paragraph provide summary and trend information to assist a player in assess overall game performance and in identifying specific game play strengths and weakness.

A partial listing of potential reports displaying information on extrinsic factors and their effect on performance include: fairway statistics (Figure 19), ball compression report (Figure 24), ball model report (Figure 25), temperature report (Figure 26), ground condition report (Figure 27), time-of-day report (Figure 29), and club set summary report (Figure 32). One skilled in the art could envision numerous additional outside factor reports such as game scores by ball model, game scores by ball compression, club performance at each temperature range, and listing of specific outside factors in order of greatest impact on game score.

The fairway statistics report (Figure 19) is available for review during game play and provides a means for player to evaluate the impact of ground conditions on club distance and to recall club directional tendencies. This screen is ideally suited to assist a player in selecting the most appropriate club for the current shot under consideration.

The ball compression report (Figure 24) provides a means to assess the impact of ball compression on club yardage. It provides information to assist a player in selecting the ideal ball compression for use during game play. One skilled in the

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art could envision, additional reports such as game scores versus ball compression used.

The ball model report (Figure 25) provides a means to assess the impact of varying ball models used on club yardage. It provides information to assist a player in selecting the ideal ball model for usage during game play. Ball model is the identifying name given by a manufacturer a given brand of balls it produces.

The temperature report (Figure 26) provides a means to assess the impact of varying temperature ranges on game performance. It provides information to assist a player in making game play decisions such as identifying the temperature ranges for optimal game performance.

The ground condition report (Figure 27) provides a means to assess the impact of the varying ground conditions on game performance. It provides information to assist a player in making game play decisions such as identifying those ground conditions that support optimal game performance.

The time-of-day report (Figure 29) provides a means to assess the impact of game start time on game performance. It provides information to assist a player in making game play decisions such as identifying the times during the day for game play to obtain best results.

The club set summary report (Figure 32) provides a means to evaluate multiple clubsets and putter performance. It provides information to assist a player in making game play

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